

REMARKS

Claims 1-22 were pending in this application.

Claims 1-22 have been rejected.

Claims 1, 2, 7-9, 14-16, and 21 have been amended as shown above.

Claims 1-22 remain pending in this application.

Reconsideration and full allowance of Claims 1-22 are respectfully requested.

I. REJECTION UNDER 35 U.S.C. § 102

The Office Action rejects Claims 1-22 under 35 U.S.C. § 102(a) as being anticipated by Gao et al., “Wavelet-Based Pressure Analysis for Hydraulic Pump Health Diagnosis” (“*Gao*”). This rejection is respectfully traversed.

A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. (*MPEP* § 2131; *In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (*Fed. Cir.* 1990)). Anticipation is only shown where each and every limitation of the claimed invention is found in a single prior art reference. (*MPEP* § 2131; *In re Donohue*, 766 F.2d 531, 534, 226 U.S.P.Q. 619, 621 (*Fed. Cir.* 1985)).

Gao recites a technique where a signal is decomposed into different “sets” of sub-band signals. (*Page 972, Left column, First paragraph; Page 976, Left column, Last paragraph*). The sets of sub-band signals are then reassembled to generate a reassembled signal. (*Page 972, Left column, First paragraph; Page 976, Left column, Last paragraph*). Defects in a hydraulic pump

can be identified by comparing the reassembled signal to a “standard” or “mother” wavelet. (*Page 976, Left column, First and second paragraphs*). The particular type of defect can be determined based on the individual high-frequency sub-bands, which differ between normal hydraulic pumps and defective hydraulic pumps. (*Page 972, Right column, Second paragraph – Page 973, Right column, Last paragraph; Page 976, Left column, Last paragraph – Right column, First paragraph*).

Claims 1, 8, 15, and 21 have been amended to recite that “relationships” between “decomposed signals” in one of a plurality of “groups” are used to identify “one or more defect indicators” at one of a plurality of “resolution levels.” Each “group” includes decomposed signals at “multiple resolution levels.”

Gao lacks any mention of grouping “decomposed signals” at multiple “resolution levels” together and then using “relationships” between those decomposed signals to identify “defect indicators.” Instead, *Gao* uses a reassembled signal (which is produced using sets of sub-band signals) to determine if a pump is defective. *Gao* also compares individual high-frequency sub-band signals to identify the type of defect. Nothing in *Gao* anticipates grouping “decomposed signals” at multiple “resolution levels” together and then using “relationships” between those decomposed signals to identify “defect indicators.”

For these reasons, *Gao* fails to anticipate the Applicants’ invention as recited in Claims 1, 8, 15, and 21 (and their dependent claims). Accordingly, the Applicants respectfully request withdrawal of the § 102 rejection and full allowance of Claims 1-22.

II. CONCLUSION

The Applicants respectfully assert that all pending claims in this application are in condition for allowance and respectfully request full allowance of the claims.

SUMMARY


If any issues arise, or if the Examiner has any suggestions for expediting allowance of this application, the Applicants respectfully invite the Examiner to contact the undersigned at the telephone number indicated below or at *wmunck@davismunck.com*.

The Commissioner is hereby authorized to charge any fees connected with this communication (including any extension of time fees) or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

DAVIS MUNCK BUTRUS, P.C.

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William A. Munck
Registration No. 39,308

P.O. Drawer 800889
Dallas, Texas 75380
(972) 628-3600 (main number)
(972) 628-3616 (fax)
E-mail: *wmunck@davismunck.com*